Assoc. Prof. EMRAH GÜLAY

Personal Information

Office Phone: +90 0232 301 0318
Web: https://avesis.deu.edu.tr/emrah.gulay

International Researcher IDs

ScholarID: 8dP9bS0AAAAJ
ORCID: 0000-0001-7825-333X
Publons / Web Of Science ResearcherID: J-2803-2019
ScopusID: 55760828200
Yoksis Researcher ID: 100779

Biography

Emrah Gulay received the B.S. degree in statistics from Ege University, Izmir, Turkey, in 2005, the M.S. and Ph.D. degrees in econometrics from Dokuz Eylul University, Izmir, Turkey, in 2008 and 2013, respectively. During the Ph.D. studies, he visited the Department of Mathematics with the University of California, San Diego, CA, USA, as a Visiting Researcher. After graduation in 2017, he was a Visiting Researcher with Risk Management Institute, NUS; in 2018, he was appointed as a Research Fellow with the School of Civil and Environmental Engineering, NTU. He is currently an Associate Professor of econometrics with Dokuz Eylul University, ˙Izmir, Turkey. His research interest includes time series analysis, financial econometrics, forecasting, and machine learning.

Education

Doctorate, Dokuz Eylul University, Sosyal Bilimler Enstitüsü, Ekonometri (Dr), Turkey 2008 - 2013
Undergraduate, Anadolu University, Faculty Of Busıness Admınıstratıon, Department Of Busıness, Turkey 2004 - 2010
Postgraduate, Dokuz Eylul University, Sosyal Bilimler Enstitüsü, Ekonometri (Yl) (Tezli), Turkey 2005 - 2008
Undergraduate, Ege University, Faculty Of Science, İstatistik Bölümü, Turkey 2000 - 2005

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Doctorate, The prediction of volatility of stock returns in different stock markets and comparison forecasting performances of volatility models, Dokuz Eylul University, Sosyal Bilimler Enstitüsü, Ekonometri (Dr), 2013
Postgraduate, The impacts of the relation between saving and investment on capital mobility, Dokuz Eylul University, Sosyal Bilimler Enstitüsü, Ekonometri (Yl) (Tezli), 2008

Academic Positions

Associate Professor, Dokuz Eylul University, İktisadi ve İdari Bilimler Fakültesi, Ekonometri Bölümü, 2020 - Continues

Assistant Professor, Dokuz Eylul University, İktisadi ve İdari Bilimler Fakültesi, Ekonometri Bölümü, 2015 - 2020
Research Assistant, Dokuz Eylul University, İktisadi ve İdari Bilimler Fakültesi, Ekonometri Bölümü, 2011 - 2015
Research Assistant, Dokuz Eylul University, Sosyal Bilimler Enstitüsü, 2006 - 2011

Academic and Administrative Experience

Ölçme Değerlendirme Kurulu Üyesi, Dokuz Eylul University, İktisadi ve İdari Bilimler Fakültesi, Ekonometri Bölümü, 2021 - Continues
Erasmus Coordinator, Dokuz Eylul University, İktisadi ve İdari Bilimler Fakültesi, Ekonometri Bölümü, 2021 - Continues
Bölüm Akademik Teşvik Değerlendirme Komisyonu Üyesi, Dokuz Eylul University, İktisadi ve İdari Bilimler Fakültesi, Ekonometri Bölümü, 2021 - 2023

Courses

Doctorate
Forecasting with Econometric Models, Doctorate, 2021 - 2022
Financial Econometrics, Doctorate, 2021 - 2022
Postgraduate
Sayısal Hesaplamalar ve Programlama , Postgraduate, 2021 - 2022
Ekonometrik Zaman Serileri Analizi II , Postgraduate, 2020 - 2021
Öngörümleme Teknikleri , Postgraduate, 2020 - 2021
Ekonometrik Zaman Serileri Analizi I, Postgraduate, 2020 - 2021
Ekonometrik Zaman Serileri Analizi II, Postgraduate, 2019 - 2020
Ekonometrik Zaman Serileri Analizi I, Postgraduate, 2019 - 2020
Finansal Veri Analizi ve Öngörümleme, Postgraduate, 2019 - 2020
Undergraduate
Introductory Econometrics, Undergraduate, 2019 - 2020
Econometrics II, Undergraduate, 2019 - 2020
Temel Bilgi Teknolojileri, Undergraduate, 2019 - 2020
Ekonometriye Giriş I, Undergraduate, 2019 - 2020
Ekonometriye Giriş II, Undergraduate, 2019 - 2020
Matematik I, Undergraduate, 2019 - 2020
Matematik II, Undergraduate, 2019 - 2020

Supervised Theses

GÜLAY E., Volatility forecasting of the cryptocurrency market: A comparison of GARCH models and deep learning algorithms, Postgraduate, Ö.BURAK(Student), 2023

Jury Memberships

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Dokuz Eylül Üniversitesi, January, 2023
Post Graduate, Post Graduate, Dokuz Eylül Üniversitesi, September, 2022

Journal articles indexed in SCI, SSCI, and AHCI

I. **Predictive performance of denoising algorithms in S&P 500 and Bitcoin returns**
Gülay E., Akgün Ö. B., Bekiroglu K., Duru O.
EXPERT SYSTEMS WITH APPLICATIONS, vol.260, pp.1-17, 2025 (SCI-Expanded)

II. **Dynamics in Realized Volatility Forecasting: Evaluating GARCH Models and Deep Learning Algorithms Across Parameter Variations**
Akgun O. B., GÜLAY E.
Computational Economics, 2024 (SCI-Expanded)

III. **Forecasting electricity production from various energy sources in Türkiye: A predictive analysis of time series, deep learning, and hybrid models**
Gülay E., Şen M., Akgün Ö. B.
ENERGY, vol.286, pp.1-14, 2024 (SCI-Expanded)

IV. **Predictability of the Physical Shipping Market by Freight Derivatives**
Duru O., GÜLAY E., Bekiroglu K.
IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT, vol.70, pp.267-279, 2023 (SCI-Expanded)

V. **A multi-method forecasting algorithm: Linear unbiased estimation of combine forecast**
Bekiroglu K., GÜLAY E., Duru O.
KNOWLEDGE-BASED SYSTEMS, vol.239, 2022 (SCI-Expanded)

VI. **Hybrid modeling in the predictive analytics of energy systems and prices**
Gulay E., Duru O.
APPLIED ENERGY, vol.268, 2020 (SCI-Expanded)

VII. **Predictive analytics of crude oil prices by utilizing the intelligent model search engine**
Bekiroglu K., Duru O., Gulay E., Su R., Lagoa C.
APPLIED ENERGY, vol.228, pp.2387-2397, 2018 (SCI-Expanded)

VIII. **Comparison of forecasting performances: Does normalization and variance stabilization method beat GARCH(1,1)-type models? Empirical evidence from the stock markets**
GÜLAY E., EMEÇ H.
JOURNAL OF FORECASTING, vol.37, no.2, pp.133-150, 2018 (SSCI)

IX. **Economic and demographic determinants of household energy use in Turkey**
Ozcan K. M., GÜLAY E., ÜÇDOĞRUK BİRECİKLİ Ş.
ENERGY POLICY, vol.60, pp.550-557, 2013 (SCI-Expanded)

Articles Published in Other Journals

I. **Does a meta-combining method lead to more accurate forecasts in the decision-making process?**
Gülay E., Aras S.
OPERATIONS RESEARCH AND DECISIONS, vol.34, no.3, pp.101-124, 2024 (ESCI)

II. **Spectral analysis of the dry bulk shipping market by utilizing the system dynamics approach**
Jeon J., GÜLAY E., Duru O.
Maritime Business Review, vol.8, no.1, pp.2-17, 2023 (Scopus)

III. **Predictability of second-hand bulk carriers with a novel hybrid algorithm**
Duru O., GÜLAY E., Girgin S. C.
Asian Journal of Shipping and Logistics, vol.37, pp.291-300, 2021 (ESCI)

IV. **Revisiting the impact of financial development on economic growth: The case of Turkey**
GÜLAY E., Cowley J. D.
Global Business and Economics Review, vol.22, no.4, pp.323-350, 2020 (Scopus)

V. **The Stock Returns Volatility based on the GARCH (1,1) Model: The Superiority of the Truncated Standard Normal Distribution in Forecasting Volatility**
GÜLAY E., EMEÇ H.
Iranian Economic Review, vol.23, no.1, pp.87-108, 2019 (Scopus)

VI. **Forecasting the total electricity production in South Africa: Comparative analysis to improve the**

predictive modelling accuracy
GÜLAY E.
AIMS Energy, vol.7, no.1, pp.88-110, 2019 (ESCI)

VII. **The nexus prevalent in nonlinear finance and growth in the presence of macroeconomic instability in Turkey: Does the stock market really matter?**
Gulay E.
BUSINESS AND ECONOMIC HORIZONS, vol.15, no.1, pp.1-19, 2019 (ESCI)

VIII. **Comparing Simple Forecasting Methods and Complex Methods: A Frame of Forecasting Competition**
GÜLAY E.
SCIENTIFIC ANNALS OF ECONOMICS AND BUSINESS, vol.65, no.2, pp.159-169, 2018 (ESCI)

IX. **ABD DOLARI/TÜRK LİRASI DÖVİZ KURUNUN OTOREGRESİF KOŞULLU DEĞİŞEN VARYANS MODELLERİ İLE İNCELENMESİ: TÜRKİYE ÖRNEĞİ**
İŞÇİOĞLU F., GÜLAY E.
Uluslararası İktisadi ve İdari İncelemeler Dergisi, no.20, pp.151-168, 2018 (Peer-Reviewed Journal)

X. **A NEW CONSENSUS BETWEEN THE MEAN AND MEDIAN COMBINATION METHODS TO IMPROVE FORECASTING ACCURACY**
ARAS S., GÜLAY E.
SERBIAN JOURNAL OF MANAGEMENT, vol.12, no.2, pp.217-236, 2017 (ESCI)

XI. **İşsizlik ve Sigara Üzerinden Alınan Vergiler Arasındaki İlişki Türkiye Analizi**
GÜLAY E., ÖZEN A.
Yönetim ve Ekonomi Dergisi, vol.23, no.2, pp.373-387, 2016 (Peer-Reviewed Journal)

XII. **İşsizlik ile Sigara Üzerinden Alınan Vergiler Arasındaki İlişki : Türkiye Analizi**
GÜLAY E., ÖZEN A.
Yönetim ve Ekonomi: Celal Bayar Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, vol.23, no.2, pp.373-387, 2016 (Peer-Reviewed Journal)

XIII. **The Empirical Role of Real Crude Oil Price and Real Exchange Rate on Economic Growth: The Case of Turkey**
GÜLAY E., Pazarlioglu M. V.
EGE ACADEMIC REVIEW, vol.16, no.4, pp.627-639, 2016 (ESCI)

XIV. **Nominal Döviz Kuru Oynaklığının Enflasyon Faiz Oranı ve Dış Ticaret Hacmindeki Değişimler ile Olan İlişkisi Türkiye Örneği**
EMEÇ H., GÜLAY E.
Finans Politik ve Ekonomik Yorumlar Dergisi, vol.50, no.578, pp.77-96, 2013 (Peer-Reviewed Journal)

XV. **Bulanık Mantık Tabanlı Ekonometrik Modelleme Para Talebi Türkiye Örneği**
ARAS S., GÜLAY E.
EGE ACADEMIC REVIEW, vol.11, no.3, pp.349-359, 2011 (Peer-Reviewed Journal)

XVI. **Alkol Tüketimi ve Sosyo Demografik Değişkenlerin Alkol Tüketimi Üzerine Etkisi**
EMEÇ H., GÜLAY E.
Ekonomik Yaklaşım, vol.19, no.68, pp.115-134, 2008 (Peer-Reviewed Journal)

XVII. **Net Portföy Yatırımları İle Rell Faiz Arasındaki ilişki Türkiye Örneği 1992 I 2005 IV**
PAZARLIOĞLU M. V., GÜLAY E.
Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, vol.9, no.2, pp.201-221, 2007 (Peer-Reviewed Journal)

Books

I. **IDENTIFYING THE SUPERIOR GARCH MODELS THROUGH MODEL CONFIDENCE SET PROCEDURE**
ARAS S., GÜLAY E.
in: SOCIAL, HUMAN AND ADMINISTRATIVESCIENCES RESEARCH PAPERS, Dr. Öğr. Üyesi İsmail ELAGÖZ, Dr. Abdül GEZER, Dr. Abdullah YILMAZ,Yrd.Doç.Dr. Göktürk ERDOĞAN, Editor, Gece Publishing, Ankara, pp.387-412, 2019

II. **VAR Model Based Empirical Mode Decomposition:A Frame of Forecasting Performances**

GÜLAY E.
in: Econometrics: Methods Applications, , Editor, Gazi Kitapevi, pp.81-92, 2018

Papers Presented at Peer-Reviewed Scientific Conferences

I. **The Effect of Macroeconomic Variables On Ecological Footprint: Panel Data Review On OECD Countries**
Yıldız S. R., Gülay E.
The 4th International Conference on Energy, Environment and Storage of Energy, Eskişehir, Turkey, 5 - 07 September 2024, pp.490

II. **Forecasting the Volatility of the Cryptocurrency Market: A Comparison of GARCH-type Models and Machine Learning Algorithms**
Akgün Ö. B., Gülay E.
International Statistics Days Conference: ISDC XII 2022, İzmir, Turkey, 13 - 16 October 2022, pp.28

III. **The Importance of Stock Market in Turkish Economy under Macroeconomic Instability**
GÜLAY E.
Uluslararası 5 Ocak Sosyal ve Beşeri Bilimler Kongresi, Adana, Turkey, 3 - 05 January 2020

IV. **GARCH Melez Yaklaşımı İle Oynaklık Modellenmesi**
ARAS S., GÜLAY E.
VI. Yıldız Uluslararası Sosyal Bilimler Kongresi, İstanbul, Turkey, 12 - 13 December 2019

V. **A Comprehensive Comparison Between GARCH Family Models By MCS Test**
GÜLAY E., ARAS S.
VI. International Conference on Applied Economics and Finance Extended with Social Sciences, Balıkesir, Turkey, 16 - 17 November 2019

VI. **Forecasting Tourist Arrivals with Economic Regressors: A Grid Search on Combinations of Different Individual Models**
GÜLAY E., Bekiroglu K., Duru O.
11TH International Statistics Congress(ICS2019), Bodrum, Turkey, 4 - 08 October 2019

VII. **Combinations in predictive analytics by using machine learning**
GÜLAY E., Duru O.
2018 IEEE SYMPOSIUM SERIES ON COMPUTATIONAL INTELLIGENCE (IEEE SSCI), Bengaluru, India, 18 - 21 November 2018, pp.2097-2103

VIII. **A New Approach to Combining Forecasts in Univariate Time Series**
GÜLAY E., ARAS S.
18th International Conference on Business, Economics and Financial Applications, Londrina, Brazil, 18 - 19 January 2016

IX. **Determining the Number of Single Models in a Combined Forecast**
ARAS S., GÜLAY E.
18th International Conference on Business, Economics and Financial Applications, Londrina, Brazil, 18 - 19 January 2016

X. **Financial Development and Economic Growth: Empirical Evidence from Turkey**
GÜLAY E., PAZARLIOĞLU M. V., COWLEY J. D.
İstanbul Conference of Economics and Finance (ICEF-2015), İstanbul, Turkey, 26 - 27 November 2015

XI. **A Novel Forecasting Combination Technique Balancing Between the Mean and Median Combination Methods**
GÜLAY E., ARAS S.
34th International Symposium on Forecasting, Netherlands, 29 June - 02 July 2014

XII. **Finans-Büyüme İlişkisinde Hisse senedi Piyasasının Rolü: Eşbütünleşme ve Nedensellik Türkiye Örneği**
EMEÇ H., GÜLAY E.

12th International Symposium on Econometrics Statistics and Operations Research, Denizli, Turkey, 26 - 29 May 2011

XIII. **Volatilite Kestirimi için Model-Free Yaklaşımı**
GÜLAY E., PAZARLIOĞLU M. V.
Istanbul Conference of Economics and Finance(ICEF-2011), İstanbul, Turkey, 20 - 21 May 2011

XIV. **Petrol fiyatları ve Reel döviz kurunun Türkiye ekonomisi üzerindeki rolü**
GÜLAY E., PAZARLIOĞLU M. V.
2. Uluslararası Ekonomi Konferansı " Bunalım sonrasında Küresel Ekonomi: Zorluklar ve Fırsatlar", Girne, Cyprus (Kktc), 1 - 03 September 2010

XV. **Türkiye'de Nominal Döviz Kuru Oynaklığının Reel Makroekonomik Performans Üzerine Olan Etkisi**
EMEÇ H., GÜLAY E.
11. Ekonometri ve İstatistik Sempozyumu, Sakarya, Turkey, 28 - 30 May 2010

XVI. **Türkiye 'de Para Talebinin Ekonometrik ve Bulanık Modelleme ile Analizi**
ARAS S., GÜLAY E.
10. Ekonometri ve İstatistik Sempozyumu, Erzurum, Turkey, 27 - 29 May 2009

XVII. **Türkiye'de Hanelerin Enerji Tercihi: Mikroekonometrik Analiz**
ÜÇDOĞRUK Ş., GÜLAY E.
10. Ekonometri ve İstatistik Sempozyumu, Erzurum, Turkey, 27 - 29 May 2009

XVIII. **Analysing Comparative Advantage and International Competitiveness: An Application to Turkey's Texttile and Clothing Industries after phase out the Import Quotas at 2005**
GÜLAY E., KESKİN S.
International Conference on Social Science (ICSS), İzmir, Turkey, 21 - 24 August 2008, pp.221-234

XIX. **Yatırım ve tasarruf arasındaki ilişkinin uluslararası sermaye hareketliliği üzerine etkisi**
GÜLAY E., PAZARLIOĞLU M. V.
9. Ekonometri ve İstatistik Sempozyumu, Kuşadası, Turkey, 28 - 30 May 2008

XX. **ALKOL TÜKETİMİ VE ALKOL TÜKETİMİNDE SOSYO-DEMOGRAFİK DEĞİŞKENLERİN ETKİSİ ÜZERİNE EKONOMETRİK MODEL UYGULAMASI**
EMEÇ H., GÜLAY E.
8. Türkiye Ekonometri ve İstatistik Kongresi, Malatya, Turkey, 24 - 25 May 2007

XXI. **NET PORTFÖY YATIRIMLARI İLE REEL FAİZ ARASINDAKİ İLİŞKİ**
PAZARLIOĞLU M. V., GÜLAY E.
8. Türkiye Ekonometri ve İstatistik Kongresi, Malatya, Turkey, 24 - 25 May 2007

Funded Projects

GÜLAY E., Şen M., Akgün Ö. B., Project Supported by Higher Education Institutions, Enerji Sorunları ve Sürdürülebilir Kalkınma: Elektrik Üretimine Öngörümsel Analitik Yaklaşım, 2022 - 2023

Activities in Scientific Journals

Economics- Innovative and Economic Research Journal, Scientific Committee Membership, 2022 - Continues

Peer Reviews in Scientific Publications

SCIENTIFIC REPORTS, Journal Indexed in SCI-E, July 2024
JOURNAL OF SUPERCOMPUTING, Journal Indexed in SCI-E, May 2024
JOURNAL OF CLEANER PRODUCTION, Journal Indexed in SCI-E, December 2023
IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT, Journal Indexed in SCI-E, May 2022

INTERNATIONAL JOURNAL OF ENERGY RESEARCH, Journal Indexed in SSCI, June 2021
The Asian Journal of Shipping and Logistics, Other Indexed Journal, June 2021
The Asian Journal of Shipping and Logistics, Other Indexed Journal, March 2021
JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT, Journal Indexed in SSCI, December 2020
The Asian Journal of Shipping and Logistics, Other Indexed Journal, February 2020
IEEE ACCESS, Journal Indexed in SCI-E, February 2020
JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT, Journal Indexed in SSCI, October 2018
ENERGY AND BUILDINGS, Journal Indexed in SCI-E, May 2018
JOURNAL OF FORECASTING, Journal Indexed in SSCI, October 2017

Mobility Activity

Other, Post Doc, Nanyang Technological University, Singapore, 2018 - 2019
Post Doc, Post Doc, National University of Singapore, Singapore, 2017 - 2018
Research Scholarship Program, Guest Researcher, University of San Diego, United States Of America, 2011 - 2012

Metrics

Publication: 49
Citation (WoS): 170
Citation (Scopus): 187
H-Index (WoS): 6
H-Index (Scopus): 5

Congress and Symposium Activities

1.Uluslararası Veri Analitiği Kongresi, Attendee, İzmir, Turkey, 2024
International Statistics Days Conference: ISDC XII 2022, Attendee, İzmir, Turkey, 2022
VI. Yıldız Uluslararası Sosyal Bilimler Kongresi, Attendee, İstanbul, Turkey, 2019
INTERNATIONAL CONFERENCE ON APPLIED ECONOMICS AND FINANCE & EXTENDED WITH SOCIAL SCIENCES, Attendee, Balıkesir, Turkey, 2019
2018 IEEE Symposium Series on Computational Intelligence (SSCI), Session Moderator, Bengaluru, India, 2018
ISTANBUL CONFERENCE OF ECONOMICS AND FINANCE, Attendee, İstanbul, Turkey, 2015
12th International Symposium on Econometrics Statistics and Operations Research, Attendee, Denizli, Turkey, 2011
Bunalım Sonrasında Küresel Ekonomi: Zorluklar ve Fırsatlar, Attendee, Girne, Cyprus (Kktc), 2010
11. Ekonometri ve İstatistik Sempozyumu, Attendee, Sakarya, Turkey, 2010
10. ekonometri ve istatistik sempozyumu, Attendee, Erzurum, Turkey, 2009

Scholarships

Doktora Araştırma Bursu, YOK, 2011 - 2012
Yurtiçi Yüksek Lisans Burs Programı, TUBITAK, 2006 - 2008

Non Academic Experience

Dokuz Eylül Üniversitesi İktisadi ve İdari Bilimler Fakültesi Ekonometri Bölümü, Araştırma Görevlisi
İzmir Katip Çelebi Üniversitesi, Ders verme

Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü, Araştırma Görevlisi